

TITLE OF THE INVENTION

SURFBOARD FIN BOX WITH DETACHABLE, LEASHED FIN

FIELD OF THE INVENTION

This invention relates to surfboard fins and fin boxes, where
5 multiple fins at the aft end of the board are used for directional
control and stability.

BACKGROUND OF THE INVENTION

Typical surfboard fin systems consist of a fin box inserted into
the surface of the surfboard at its aft end on the underside of the
10 board plus a surfboard fin that is inserted into the box and held
fixedly. When a fin breaks or is damaged, the fin can be removed
from the box by means of unscrewing screws or loosening some
other attachment device, removing the broken fin, and replacing it
with a new one. The same attachment devices are then re-tightened
15 or reattached and the board can be used once again.

United States Patent No. 5,133,681 by Lobe teaches a sailboard fin system with a leash connecting the fin to the fin box. However, the sailboard fin box is a through-the-board system unlike surfboard systems and the fin attachment mechanism is designed to break
5 selectively to prevent damage to the fin from striking underwater objects. US Patent No. 5,493,989 teaches a system for permitting sailboard or surfboard fin depth adjustment.

None of the prior art devices possess the unique capabilities of the present invention, namely adjustable attachment devices that
10 allow a fin to be re-attached while the surfboard rider is in the water or at the beach and a box that does not require a through-the-board anchoring. The attachment devices can be adjusted to hold the fin tightly enough to provide board control for the rider but loosely enough that the fin will pop out and remain undamaged when
15 striking an underwater obstacle.

BRIEF SUMMARY OF THE INVENTION

The present invention consists of a new design for a surfboard fin box and fin that allows the fin to be connected to the box by means of a leash. The present invention also possesses adjustable attachment devices in the box that permit the surfboard rider to insert the fin into the box and control the amount of retentive friction exerted on the fin by the box. The adjustable attachment devices will release the fin when an underwater obstruction is encountered and the leash will retain the fin connected to the fin box, and thus to the board. A surfer can re-attach the fin to the box by use of a simple attachment device adjustment tool, such as a hex wrench, even in the water. None of the components of the box or the fin system are destroyed to permit the fin to break loose, so the system can be re-used without purchasing and replacing parts.

It is an object of this invention to provide a surfboard box and fin system that is easy to use and maintain.

It is a further object of this invention to provide a fin box that possesses easily adjustable attachment device for the fin.

It is a further object of this invention to provide a fin that allows the storage of the leash directly under the fin.

5 It is a further object of this invention to make the shape of the fin end that is inserted in the box such that the fin will release easily when struck from front or back, without any component of the fin or the box breaking.

10 It is a further object of this invention to permit the user to make his own repairs of the fin by reattaching the fin to the box at sea or on the beach.

BRIEF DESCRIPTION OF THE DRAWINGS

The construction and operation of the invention can be readily appreciated from inspection of the drawings that accompany this
15 application, combined with the detailed specification to follow.

Figure 1 is a perspective drawing of the preferred embodiment of the invention as installed on a surfboard.

Figure 2 is a side view of the preferred embodiment of the invention showing the fin detached from the box.

5 Figure 3 is a top view of the box.

Figure 4 is front view of the invention with the fin detached from the box.

Figure 5 is a cross section view showing the fin inserted into the box.

10 Figure 6 is a side view showing the fin inserted into the box with an alternative shape for the fin base.

DETAILED DESCRIPTION OF THE INVENTION

The operation of the invention can be appreciated by looking at the preferred embodiment of the invention as shown in Fig. 1.

15 The invention consists of a fin box¹⁰¹ that is fixedly inserted into a surfboard¹⁰⁰, and a leash¹⁰² attaching a fin¹⁰³ to the fin box¹⁰¹. In

Fig. 2, the leash attachment position¹⁰⁴ and the plurality of fin attachment points¹⁰⁵ are shown. In Fig. 5, the inserted fin¹⁰³ is shown, with the leash¹⁰² stowed under the fin¹⁰³ in the fin cutout¹⁰⁶. Note that the inserted end¹⁰⁹ of the fin¹⁰³ possesses
5 two bevel cuts¹⁰⁶ that permit the fin¹⁰³ to release easily from the fin box¹⁰¹.

In Fig. 3, the fin attachment points¹⁰⁵ are shown alongside the fin box slot¹⁰⁷, where the fin¹⁰³ is inserted. In Fig. 4, it can be seen that the fin attachment points¹⁰⁵ are slanted to the perpendicular
10 so that the fin attachment means¹⁰⁸ can be pressed against the side of the fin¹⁰³ with adjustment pressure. In the preferred embodiment, the fin attachment means¹⁰⁸ are a pair of set screws that can be tightened by a standard hex wrench.

Fig. 6 is an alternative embodiment of the invention, where the
15 inserted end¹⁰⁹ of the fin¹⁰³ possesses a rounded shape¹¹⁰, unlike the bevel cuts¹⁰⁶ of the preferred embodiment. This shape is

designed to fit the curvature of the box¹⁰¹ as shown. The rounded shape fits more snugly into the box¹⁰¹ but still releases easily when the fin¹⁰³ is struck from either front or back. The fin box¹⁰¹ does not move out of the surfboard¹⁰⁰ when the fin¹⁰³ is struck.

5 While the foregoing describes a preferred embodiment and several alternative embodiments, variation on this design and equivalent designs may be resorted to in the scope and spirit of the claimed invention.

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